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SK Energy Daily

2018년 7월 4일

1. News Summary (3 page)

News		Conclusion
WTI comment	하루 만에 다시 상승…WTI, 74달러 회복	
Headline	中 켐차이나·시노켐 합병 공식화…세계 최대 화학기업 탄생	철강, 조선에 이어 화학에서도 거대기업 탄생으로 구조조정하는 중국
News 1.	이란대통령 "미, 이란 원유수출 못 막아"…공급차질 경고	이란산 원유 공급이 줄어도 미국산 공급이 늘어나 숏티지 가능성 제한됨
News 2.	'미세먼지 주범' 유연탄에 "개소세 인상" 권고…전기료 꿈틀할까	개소세 인상은 전기 생산단가 상승으로 이어져 결국 전기료가 오를 것
News 3.	-	-
News 4.	-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	$/bbl	74.1	0.3	5.1	14.5	16.7	57.5
Dubai	$/bbl	74.8	(1.1)	2.4	0.5	14.7	54.4
Gasoline	$/bbl	83.0	(1.6)	2.1	(4.4)	5.0	35.7
Diesel	$/bbl	85.9	(1.7)	1.1	(2.8)	5.9	40.2
Complex margin	$/bbl	5.3	(0.4)	(0.1)	(2.1)	(2.9)	(2.4)
1M lagging	$/bbl	4.6	(3.1)	3.3	(6.9)	(7.3)	(1.3)
Petrochemical			%	%	%	%	%
Naphtha	$/t	665	0.2	5.0	(0.7)	11.4	57.7
Butadiene	$/t	1,600	0.0	0.6	(8.0)	15.9	64.1
HDPE	$/t	1,340	(0.7)	(0.7)	(1.8)	2.3	24.1
MEG	$/t	896	0.1	0.3	(2.6)	(6.7)	12.0
PX	$/t	988	0.5	4.8	1.5	5.5	28.1
SM	$/t	1,315	1.3	(2.4)	(9.6)	0.0	17.8
Commodity			%	%	%	%	%
Natural Gas	$/mmbtu	2.87	0.3	(2.1)	(1.3)	1.8	0.5
Natural rubber	$/t	1,310	0.0	(1.5)	(6.4)	(3.0)	(11.5)
Cotton	C/lbs	84.5	0.0	(0.6)	(5.9)	3.1	14.7

*참고: 정제마진의 변동률은 %가 아닌 $/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	07/02	$/t	1,260	0.0	2.9	(0.4)	44.0
Propylene	07/02	$/t	980	(2.5)	(3.4)	3.7	32.0
Benzene	07/02	$/t	808	0.3	(5.3)	(3.0)	6.3
Toluene	07/02	$/t	785	(1.3)	(3.7)	8.3	24.6
Xylene	07/02	$/t	800	(3.0)	(5.9)	4.9	31.1
PP	07/02	$/t	1,283	(0.8)	0.4	4.5	23.6
PVC	07/02	$/t	935	0.0	1.6	(3.1)	7.5
ABS	07/02	$/t	2,000	(2.0)	(3.8)	2.0	11.7
SBR	07/02	$/t	1,780	(1.1)	(6.3)	6.6	22.8
SM	07/02	$/t	1,363	(0.9)	(9.8)	3.2	18.2
BPA	07/02	$/t	1,765	(1.3)	1.6	2.5	18.9
Caustic	07/02	$/t	475	(3.3)	(13.6)	(25.7)	6.1
2-EH	07/02	$/t	1,100	(0.9)	(6.0)	(7.6)	19.6
Caprolactam	07/02	$/t	2,130	0.0	1.2	(3.2)	32.3
Solar				%	%	%	%
Polysilicon	06/27	$/kg	11.3	(4.9)	(22.9)	(24.3)	(18.6)
Module	06/27	$/W	0.27	(2.9)	(7.5)	(10.6)	(18.2)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	82.2	0.6	2.0	0.5	9.6	0.2
Shell	EUR	2,611	0.5	1.4	(0.2)	16.9	26.0
Petrochina	CNY	7.53	0.3	2.7	(5.9)	0.5	(2.7)
Gazprom	RUB	142.5	(1.0)	3.2	(1.0)	1.0	18.9
Petrobras	BRL	17.5	0.2	9.1	8.3	(15.5)	41.6
Refinery							
Phillips66	USD	110.5	(0.1)	(0.3)	(7.1)	14.9	32.6
Valero	USD	108.2	(1.0)	(1.9)	(12.6)	16.7	59.0
JX	JPY	775.8	2.4	5.5	9.5	24.1	56.3
Neste Oil	EUR	65.4	(0.9)	(1.2)	(6.0)	15.9	88.3

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	81.3	(0.4)	0.7	(4.2)	(1.4)	(1.8)
DowDuPont	USD	65.2	(0.9)	(1.7)	(1.5)	2.9	1.9
SABIC	SAR	123.4	(0.5)	(2.8)	(4.5)	7.5	19.9
Formosa Pla.	TWD	113.0	0.4	2.7	3.2	10.8	21.6
Shin-Etsu	JPY	9,895	1.1	(0.1)	(9.3)	(9.1)	(2.4)
Renewable							
Wacker	EUR	116.3	3.5	6.7	(18.6)	(13.3)	21.7
First Solar	USD	52.36	(1.3)	0.9	(20.6)	(24.9)	30.7
GCL-Poly	HKD	0.71	(4.1)	(7.8)	(18.4)	(28.3)	(14.5)
Tesla Motors	USD	310.9	(7.2)	(9.1)	6.5	16.2	(11.8)

4. Coverage Summary

	07/03	1D	1W	1M	3M	6M	12M	투자의견	TP	%	P/E	P/B
KOSPI	2,273	0.1	(3.3)	(6.8)	(5.6)	(7.9)	(5.0)				* 추정치는 12M fwd 기준임	
KOSPI화학	5,549	(1.3)	(6.1)	(6.3)	(9.7)	(8.6)	1.8				* 모든 coverage 업체의 실적은 연결기준임	
LG화학	317,500	0.0	(8.9)	(5.8)	(15.6)	(21.6)	9.1	매수	450,000	41.7	10.99	1.46
롯데케미칼	328,000	(0.6)	(6.8)	(9.6)	(24.4)	(10.9)	(4.7)	매수	480,000	46.3	9.47	0.93
한화케미칼	20,700	0.5	(8.6)	(19.9)	(27.6)	(34.5)	(31.5)	매수	39,000	88.4	7.37	0.53
금호석유화학	115,500	1.3	(0.4)	8.5	25.3	16.1	57.1	매수	150,000	29.9	11.24	1.73
KCC	316,500	(0.8)	(4.4)	(9.7)	(7.2)	(16.9)	(27.5)	매수	450,000	42.2	11.59	0.49
OCI	98,400	(0.8)	(8.0)	(24.9)	(38.5)	(27.6)	9.7	매수	180,000	82.9	7.34	0.66
SKC	41,600	(2.5)	(6.4)	6.8	13.7	(11.5)	24.0	매수	50,000	20.2	11.41	1.03
SK이노베이션	184,500	(1.9)	(10.9)	(9.3)	(12.1)	(9.8)	16.4	매수	230,000	24.7	11.26	0.93
S-Oil	102,000	(0.5)	(11.3)	(5.6)	(14.3)	(12.8)	7.6	매수	140,000	37.3	12.36	1.60
GS	51,500	1.0	(7.4)	(10.9)	(15.2)	(17.2)	(24.5)	매수	80,000	55.3	4.84	0.65
SK가스	90,300	(0.8)	(3.6)	(9.4)	(8.3)	(4.1)	(30.0)	매수	130,000	44.0	7.93	0.60
포스코대우	20,550	1.2	(1.9)	(12.0)	(9.1)	13.2	(7.8)	매수	25,000	21.7	10.92	0.87
LG상사	22,650	(1.9)	(5.6)	(14.4)	(14.5)	(16.6)	(27.1)	매수	38,000	67.8	7.39	0.67
한국전력	31,700	(2.3)	(8.1)	(3.6)	(9.0)	(16.9)	(22.3)	매수	45,000	42.0	6.98	0.25
한국가스공사	59,800	(0.5)	(5.7)	(4.3)	21.3	40.5	12.4	매수	60,000	0.3	10.42	0.79

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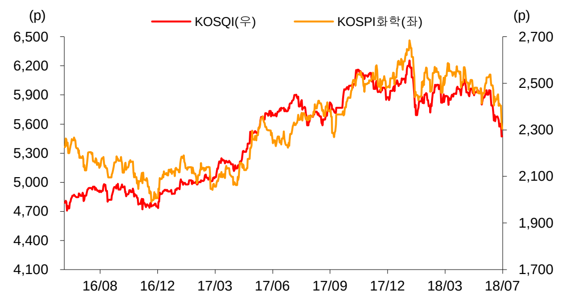
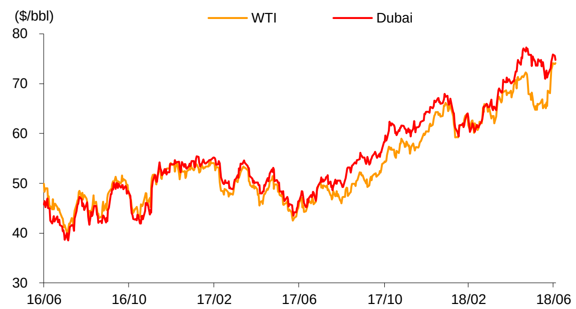
Key Chart

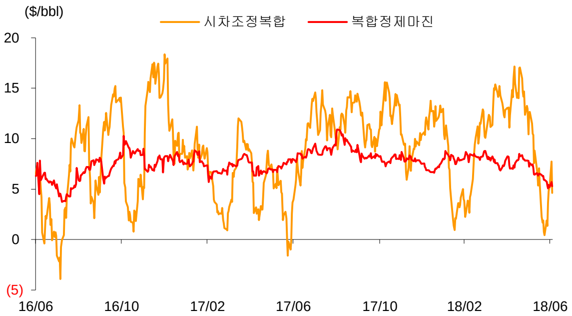
KOSPI/KOSPI화학



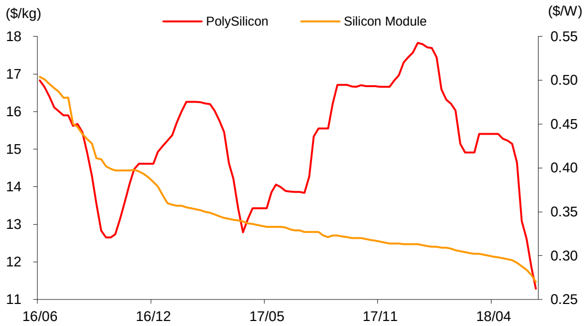
WTI/Dubai



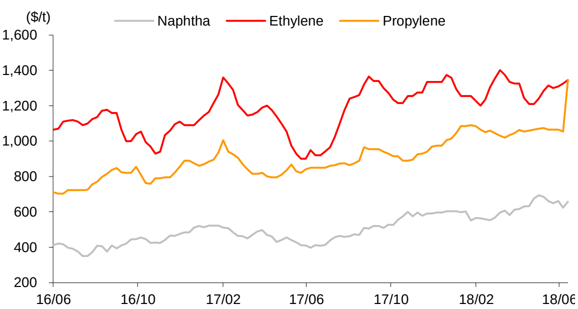
Complex & 1M lagging margin



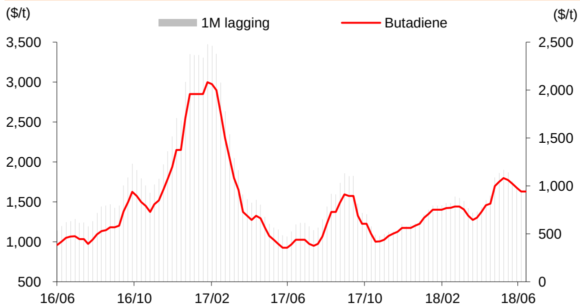
Polysilicon & Module prices



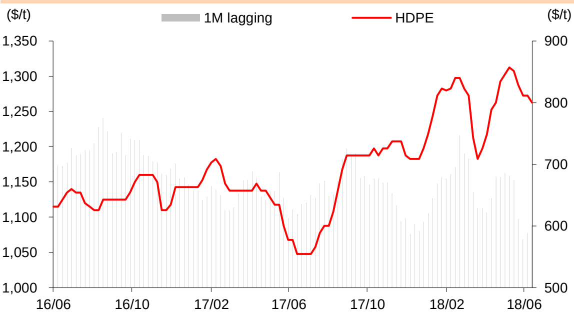
Naphtha/Ethylene/Propylene prices



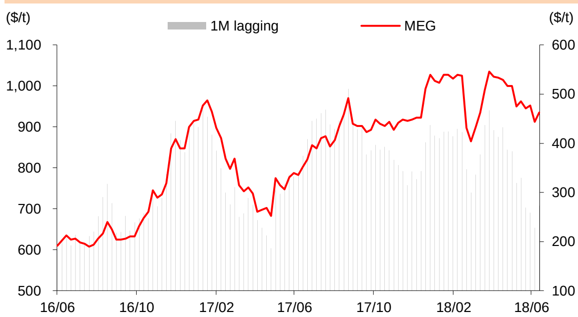
Butadiene price & 1M lagging naphtha spread



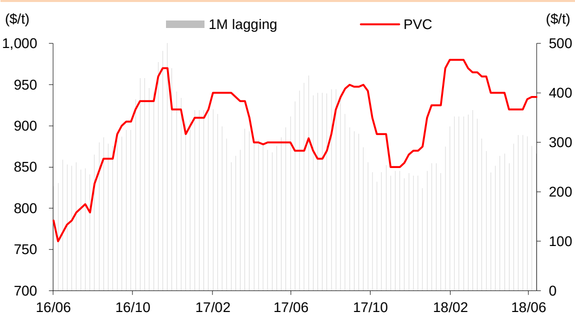
HDPE price & 1M lagging naphtha spread



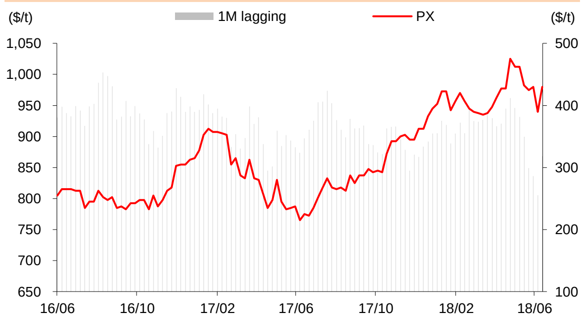
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



자료: Bloomberg, Cischem, Petronet, Platts, Pvinsights, SK증권
참고: 상기 데이터는 일괄적으로 과거 2년치 적용

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News Comment

Headline	(출처: 연합뉴스)
제목	中 켐차이나·시노켐 합병 공식화…세계 최대 화학기업 탄생
결론	철강, 조선에 이어 화학에서도 거대기업 탄생으로 구조조정하는 중국
세부	
	1) 국무원은 닝가오닝 시노켐 회장이 켐차이나 회장을 겸임하도록 승인
	2) 소문으로 떠돌던 양대 국유 화공업체의 통합이 본궤도에 올라 공식화
	3) 독일 BASF를 제치고 화학약품, 비료, 석유정제 등에서 총매출 117조원
	4) '16년 시노켐의 매출은 3천955억 위안, 켐차이나 매출은 3천억 위안
	5) 철강, 조선에 이어 화학에서도 거대기업 탄생으로 구조조정하는 중국

WTI Comment	(출처: 연합뉴스)
제목	하루 만에 다시 상승…WTI, 74달러 회복
상승 요인	복원을 앞둔 미국의 대(對) 이란 제재가 지속해서 유가를 압박
하락 요인	

Issue 1	(출처: 연합뉴스)
제목	이란대통령 "미, 이란 원유수출 못 막아"…공급차질 경고
결론	이란산 원유 공급이 줄어도 미국산 공급이 늘어나 솟티지 가능성 제한됨
세부	
	1) 로하니 이란 대통령이 이란산 원유 수출을 막겠다고 한 미국 거듭 비판
	2) 로하니, "미국의 시나리오는 국제법을 노골적으로 위반하는 것"
	3) 로하니, "이란 제외하고 모든 산유국 수출 허용한다는 것은 부당함"
	4) 로하니, "이란 수출을 막으면 원유 공급이 차질을 빚어 시장 교란될 것"
	5) 이란산 원유 공급이 줄어도 미국산 공급이 늘어나 솟티지 가능성 제한됨

Issue 2	(출처: 연합뉴스)
제목	'미세먼지 주범' 유연탄에 "개소세 인상" 권고…전기료 꿈틀할까
결론	개소세 인상은 전기 생산단가 상승으로 이어져 결국 전기료가 오를 것
세부	
	1) 재정개혁특별위원회가 유연탄에 붙는 세금을 올리라고 권고함
	2) LNG에 붙는 개별소비세를 현행대로 유지, 유연탄은 인상하라고 제시함
	3) 또는 유연탄 개소세 인상하되 LNG 세금 부담을 내리는 방안도 제시함
	4) 현재 유연탄에는 kg당 36원의 개소세가 붙고 부가가치세 10%가 추가됨
	5) 개소세 인상은 전기 생산단가 상승으로 이어져 결국 전기료가 오를 것

Issue 3	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

Issue 4	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

Issue 5	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

Issue 6	
제목	
결론	
세부	
	1)
	2)
	3)
	4)
	5)

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Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
F/X	USD/EUR	0.858	0.859	0.859	0.858	0.815	0.832	0.880	0.833	0.904	0.887	0.827
	Change, %		(0.2)	(0.1)	0.0	5.2	3.1	(2.5)	3.0	(5.1)	(3.3)	3.7
	USD/JPY	110.6	110.9	110.1	109.5	106.6	112.5	113.4	112.6	108.8	112.1	108.8
	Change, %		(0.3)	0.5	1.0	3.7	(1.7)	(2.5)	(1.8)	1.7	(1.4)	1.7
	USD/KRW	1,118.8	1,120.0	1,114.8	1,075.0	1,054.7	1,064.7	1,146.8	1,066.7	1,160.5	1,130.9	1,076.8
	Change, %		(0.1)	0.4	4.1	6.1	5.1	(2.4)	4.9	(3.6)	(1.1)	3.9
Agriculture	Corn	342.8	337.5	352.5	391.5	388.5	353.0	378.0	350.8	358.5	359.4	374.2
	Change, %		1.6	(2.8)	(12.5)	(11.8)	(2.9)	(9.3)	(2.3)	(4.4)	(4.6)	(8.4)
	Soybean	844.0	848.5	867.3	1,021.3	1,038.0	959.8	964.8	951.8	987.5	975.9	997.7
	Change, %		(0.5)	(2.7)	(17.4)	(18.7)	(12.1)	(12.5)	(11.3)	(14.5)	(13.5)	(15.4)
	Wheat	491.5	480.3	469.5	523.3	457.5	436.0	536.8	427.0	436.4	436.0	476.3
	Change, %		2.3	4.7	(6.1)	7.4	12.7	(8.4)	15.1	12.6	12.7	3.2
	Rice	12.0	11.8	12.5	11.4	12.4	11.4	11.5	11.7	10.3	11.1	12.2
	Change, %		1.7	(4.0)	4.8	(3.1)	5.2	4.2	2.7	16.0	8.5	(1.8)
	Oats	254.0	245.5	241.3	246.0	232.5	244.5	284.5	241.0	196.3	252.3	245.7
	Change, %		3.5	5.3	3.3	9.2	3.9	(10.7)	5.4	29.4	0.7	3.4
MYR/mt	Palm Oil	2,287.0	2,303.0	2,280.0	2,436.0	2,410.0	2,555.0	2,642.0	2,444.0	2,653.8	2,787.3	2,426.3
	Change, %		(0.7)	0.3	(6.1)	(5.1)	(10.5)	(13.4)	(6.4)	(13.8)	(18.0)	(5.7)
	Cocoa	2,418.0	2,465.0	2,431.0	2,458.0	2,498.0	1,907.0	1,921.0	1,892.0	2,854.0	2,005.2	2,393.6
	Change, %		(1.9)	(0.5)	(1.6)	(3.2)	26.8	25.9	27.8	(15.3)	20.6	1.0
	Cotton	84.5	84.5	85.0	93.3	82.0	78.1	73.7	78.6	65.6	73.5	83.6
	Change, %		0.0	(0.6)	(9.4)	3.1	8.2	14.7	7.5	28.9	15.0	1.2
	Sugar	11.4	11.6	12.1	12.5	12.5	15.3	13.9	15.2	18.2	15.8	12.7
	Change, %		(1.5)	(6.0)	(9.0)	(8.7)	(25.6)	(18.2)	(24.9)	(37.2)	(28.0)	(10.0)
	Coffee	108.4	107.8	114.8	122.8	116.6	128.6	125.9	126.2	136.1	133.0	118.9
	Change, %		0.5	(5.6)	(11.7)	(7.1)	(15.7)	(13.9)	(14.1)	(20.4)	(18.5)	(8.9)
Energy	WTI	74.1	73.9	70.5	65.8	63.5	61.6	47.1	60.4	43.4	51.0	65.6
	Change, %		0.3	5.1	12.7	16.7	20.3	57.5	22.7	70.9	45.5	13.0
	Brent	77.8	77.3	76.3	76.8	68.1	67.8	49.7	66.9	45.1	54.9	71.3
	Change, %		0.6	1.9	1.3	14.2	14.6	56.5	16.3	72.5	41.8	9.1
	Natural Gas	2.9	2.9	2.9	3.0	2.7	3.0	3.0	3.0	2.6	3.0	2.8
	Change, %		0.3	(2.3)	(3.1)	6.4	(4.6)	(2.7)	(2.8)	12.4	(5.0)	1.1
	Ethanol	1.4	1.4	1.4	1.5	1.4	1.3	1.5	1.3	1.5	1.5	1.4
	Change, %		0.0	0.6	(4.0)	(0.1)	6.4	(7.5)	6.3	(7.4)	(6.3)	(2.5)
	RBOB Gasoline	211.8	210.5	207.5	214.3	197.4	179.7	153.5	179.9	140.0	162.9	199.0
	Change, %		0.6	2.1	(1.2)	7.3	17.8	38.0	17.7	51.3	30.0	6.4
	Coal	115.4	115.0	114.8	111.1	92.0	103.8	79.5	100.8	65.5	88.2	103.5
	Change, %		0.3	0.5	3.9	25.4	11.1	45.2	14.4	76.2	30.8	11.4
Metal	Gold	1,252.7	1,242.0	1,259.1	1,293.7	1,332.8	1,313.2	1,220.1	1,302.6	1,248.5	1,258.6	1,316.7
	Change, %		0.9	(0.5)	(3.2)	(6.0)	(4.6)	2.7	(3.8)	0.3	(0.5)	(4.9)
	Silver	16.0	15.9	16.3	16.4	16.4	17.1	16.1	16.9	17.1	17.1	16.6
	Change, %		1.1	(1.7)	(2.4)	(2.4)	(6.5)	(0.7)	(5.5)	(6.3)	(6.2)	(3.7)
	Copper	6,491.0	6,523.0	6,713.0	6,896.0	6,796.0	7,147.0	5,928.0	7,247.0	4,872.0	6,199.4	6,935.4
	Change, %		(0.5)	(3.3)	(5.9)	(4.5)	(9.2)	9.5	(10.4)	33.2	4.7	(6.4)
	Nickel	984.5	1,001.6	1,013.5	1,030.3	876.8	790.9	606.9	809.1	646.4	680.2	915.3
	Change, %		(1.7)	(2.9)	(4.4)	12.3	24.5	62.2	21.7	52.3	44.7	7.6
	Zinc	2,789.0	2,822.0	2,840.0	3,101.0	3,280.0	3,327.0	2,805.0	3,319.0	2,097.5	2,888.5	3,235.9
	Change, %		(1.2)	(1.8)	(10.1)	(15.0)	(16.2)	(0.6)	(16.0)	33.0	(3.4)	(13.8)
	Lead	2,391.3	2,386.0	2,411.5	2,441.3	2,397.8	2,578.5	2,324.8	2,482.8	1,868.3	2,315.7	2,450.3
	Change, %		0.2	(0.8)	(2.0)	(0.3)	(7.3)	2.9	(3.7)	28.0	3.3	(2.4)
	Aluminum	13,915.0	13,985.0	14,005.0	14,555.0	14,040.0	14,970.0	13,985.0	15,020.0	12,373.5	14,556.6	14,374.2
	Change, %		(0.5)	(0.6)	(4.4)	(0.9)	(7.0)	(0.5)	(7.4)	12.5	(4.4)	(3.2)
	Cobalt	74,750.0	74,750.0	77,250.0	88,000.0	93,050.0	75,205.0	59,460.0	75,205.0	25,480.1	55,906.9	84,559.1
	Change, %		0.0	(3.2)	(15.1)	(19.7)	(0.6)	25.7	(0.6)	193.4	33.7	(11.6)
	HR Coil	920.0	910.0	900.0	924.0	865.0	660.0	638.0	662.0	519.3	620.1	817.4
	Change, %		1.1	2.2	(0.4)	6.4	39.4	44.2	39.0	77.2	48.4	12.6
	Scrap	390.0	400.0	400.0	405.0	400.0	369.0	360.0	367.0	275.7	344.7	389.0
	Change, %		(2.5)	(2.5)	(3.7)	(2.5)	5.7	8.3	6.3	41.5	13.1	0.2

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

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Refining Price Data

Daily Price		07/03	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	**WTI**	74.1	73.9	70.5	64.8	63.5	60.4	47.1	53.7	43.4	50.9	65.6
	Change, %		*0.3*	*5.1*	*14.5*	*16.7*	*22.8*	*57.5*	*38.0*	*71.0*	*45.7*	*13.1*
	Dubai	74.8	75.6	73.0	74.4	65.2	64.4	48.4	53.8	41.3	53.1	68.2
	Change, %		*(1.1)*	*2.4*	*0.5*	*14.7*	*16.2*	*54.4*	*38.9*	*81.0*	*40.8*	*9.6*
Crude Oil	**Gasoline(휘발유)**	83.0	84.3	81.3	86.8	79.0	76.5	61.1	69.8	56.3	68.0	81.1
Product	*Change, %*		*(1.6)*	*2.1*	*(4.4)*	*5.0*	*8.4*	*35.7*	*18.8*	*47.5*	*22.0*	*2.4*
	Kerosene(등유)	87.8	88.7	85.4	88.4	82.1	79.2	60.0	66.4	52.9	65.2	83.8
	Change, %		*(1.0)*	*2.9*	*(0.6)*	*6.9*	*11.0*	*46.5*	*32.2*	*66.1*	*34.6*	*4.8*
	Diesel(경유)	85.9	87.5	85.0	88.4	81.2	78.7	61.3	65.5	52.1	65.6	82.9
	Change, %		*(1.7)*	*1.1*	*(2.8)*	*5.9*	*9.1*	*40.2*	*31.2*	*64.9*	*31.0*	*3.7*
	Bunker-C	71.6	72.4	69.1	69.9	57.8	58.3	46.6	52.1	35.5	49.7	62.1
	Change, %		*(1.2)*	*3.6*	*2.4*	*23.8*	*22.9*	*53.6*	*37.5*	*101.5*	*44.2*	*15.3*
	Naphtha	72.3	72.6	69.3	73.2	65.4	67.7	45.7	53.5	42.6	53.7	67.3
	Change, %		*(0.4)*	*4.4*	*(1.2)*	*10.6*	*6.8*	*58.4*	*35.3*	*69.8*	*34.5*	*7.5*
Dubai	**Gasoline(휘발유)**	8.2	8.8	8.2	12.4	13.9	12.1	12.7	16.0	14.9	14.9	12.9
Spread	*Change*		*(0.6)*	*(0.0)*	*(4.2)*	*(5.7)*	*(3.9)*	*(4.5)*	*(7.8)*	*(6.7)*	*(6.7)*	*(4.7)*
	Kerosene(등유)	13.1	13.1	12.3	14.0	17.0	14.8	11.5	12.6	11.6	12.1	15.6
	Change		*(0.1)*	*0.7*	*(0.9)*	*(3.9)*	*(1.7)*	*1.5*	*0.5*	*1.5*	*0.9*	*(2.5)*
	Diesel(경유)	11.2	11.9	12.0	14.0	16.0	14.4	12.9	11.7	10.8	12.5	14.7
	Change		*(0.7)*	*(0.8)*	*(2.8)*	*(4.8)*	*(3.2)*	*(1.7)*	*(0.5)*	*0.4*	*(1.3)*	*(3.5)*
	Bunker-C	(3.2)	(3.1)	(4.0)	(4.5)	(7.3)	(6.1)	(1.8)	(1.8)	(5.8)	(3.4)	(6.1)
	Change		*(0.1)*	*0.8*	*1.3*	*4.1*	*2.9*	*(1.4)*	*(1.4)*	*2.6*	*0.2*	*2.9*
	Naphtha	(2.5)	(3.0)	(3.8)	(1.2)	0.2	3.3	(2.8)	(0.4)	1.3	0.6	(0.9)
	Change		*0.5*	*1.3*	*(1.3)*	*(2.7)*	*(5.8)*	*0.3*	*(2.1)*	*(3.8)*	*(3.1)*	*(1.6)*
Refining	**Simple(단순)**	1.5	1.8	1.3	2.3	2.2	2.1	3.6	3.8	1.9	3.2	2.1
Margin	*Change*		*(0.2)*	*0.2*	*(0.8)*	*(0.7)*	*(0.6)*	*(2.1)*	*(2.3)*	*(0.4)*	*(1.6)*	*(0.5)*
	Complex(복합)	5.3	5.7	5.3	7.4	8.2	7.5	7.7	8.3	7.0	8.0	7.5
	Change		*(0.4)*	*(0.1)*	*(2.1)*	*(2.9)*	*(2.2)*	*(2.4)*	*(3.0)*	*(1.7)*	*(2.7)*	*(2.2)*
	Complex(lagging)	4.6	7.7	1.3	11.5	11.9	10.7	5.9	18.0	8.5	8.9	9.7
	Change		*(3.1)*	*3.3*	*(6.9)*	*(7.3)*	*(6.0)*	*(1.3)*	*(13.3)*	*(3.9)*	*(4.3)*	*(5.1)*

자료 : Petronet, SK증권
참고 1) Crude Oil 가격은 현물(spot) 기준으로 선물(future) 가격과 다를 수 있음
참고 2) Gasoline은 95RON, 경유는 L/P 0.5%, Bunker-C는 380cst/4.0% 기준임

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Petrochemical Price Data

Daily Price			07/03	07/02	06/29	06/28	06/27	06/26	06/25	06/22	06/21	06/20
Spot Price	**Naphtha**	CFR Japan	664.6	663.1	658.8	652.4	642.8	632.8	632.0	623.5	619.5	634.0
	Ethylene	CFR SE Asia	1,270.0	1,270.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0	1,260.0
	Propylene	FOB Korea	1,060.0	1,060.0	1,055.0	1,050.0	1,050.0	1,050.0	1,050.0	1,060.0	1,060.0	1,070.0
	Butadiene	FOB Korea	1,600.0	1,600.0	1,600.0	1,590.0	1,590.0	1,590.0	1,620.0	1,620.0	1,640.0	1,640.0
	HDPE	CFR FE Asia	1,340.0	1,350.0	1,350.0	1,350.0	1,350.0	1,350.0	1,355.0	1,355.0	1,355.0	1,355.0
	LDPE	CFR FE Asia	1,170.0	1,170.0	1,175.0	1,175.0	1,175.0	1,175.0	1,190.0	1,190.0	1,190.0	1,190.0
	LLDPE	CFR FE Asia	1,140.0	1,140.0	1,150.0	1,150.0	1,150.0	1,150.0	1,160.0	1,160.0	1,160.0	1,165.0
	MEG	CFR China	896.0	895.0	905.0	895.0	895.0	893.0	885.0	880.0	882.0	880.0
	PP	CFR FE Asia	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,245.0	1,245.0	1,245.0	1,245.0	1,245.0
	PX	CFR China	987.8	982.7	973.7	965.7	964.7	942.7	936.2	931.7	927.7	937.7
	PTA	CFR China	845.0	845.0	845.0	845.0	835.0	830.0	830.0	830.0	830.0	830.0
	Benzene	FOB Korea	820.7	819.2	813.7	817.7	814.7	808.0	811.0	800.0	800.7	807.7
	Toluene	FOB Korea	745.0	745.0	746.0	744.0	736.0	728.0	725.0	725.0	732.0	734.0
	Xylene	FOB Korea	837.0	833.0	831.5	819.5	819.5	792.5	787.5	783.5	778.5	783.5
	SM	FOB Korea	1,315.0	1,298.0	1,311.0	1,316.5	1,332.0	1,347.0	1,362.0	1,349.0	1,342.0	1,339.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	**Naphtha**	CFR Japan	658.5	623.5	662.0	607.0	558.0	411.5	484.5	399.5	493.5	613.7
	Change, %			*5.6*	*(0.5)*	*8.5*	*18.0*	*60.0*	*35.9*	*64.8*	*33.4*	*7.3*
	Ethylene	CFR SE Asia	1,260.0	1,260.0	1,225.0	1,265.0	1,187.5	875.0	990.0	1,040.9	1,090.9	1,233.5
	Change, %			*0.0*	*2.9*	*(0.4)*	*6.1*	*44.0*	*27.3*	*21.0*	*15.5*	*2.2*
	Propylene	CFR SE Asia	980.0	1,005.0	1,015.0	945.0	985.0	742.5	815.0	705.7	823.6	1,067.0
	Change, %			*(2.5)*	*(3.4)*	*3.7*	*(0.5)*	*32.0*	*20.2*	*38.9*	*19.0*	*(8.2)*
	Butadiene	CFR SE Asia	1,580.0	1,580.0	1,725.0	1,275.0	1,375.0	975.0	2,100.0	1,116.8	1,481.1	1,423.3
	Change, %			*0.0*	*(8.4)*	*23.9*	*14.9*	*62.1*	*(24.8)*	*41.5*	*6.7*	*11.0*
	Benzene	CFR SE Asia	807.5	805.0	852.5	832.5	905.0	760.0	822.5	646.7	838.8	871.3
	Change, %			*0.3*	*(5.3)*	*(3.0)*	*(10.8)*	*6.3*	*(1.8)*	*24.9*	*(3.7)*	*(7.3)*
	Toluene	CFR SE Asia	785.0	795.0	815.0	725.0	750.0	630.0	690.0	630.5	689.5	766.0
	Change, %			*(1.3)*	*(3.7)*	*8.3*	*4.7*	*24.6*	*13.8*	*24.5*	*13.9*	*2.5*
	Xylene	CFR SE Asia	800.0	825.0	850.0	762.5	762.5	610.0	675.0	627.7	668.8	779.2
	Change, %			*(3.0)*	*(5.9)*	*4.9*	*4.9*	*31.1*	*18.5*	*27.4*	*19.6*	*2.7*
Spread	**Ethylene**	-Naphtha	601.5	636.5	563.0	658.0	629.5	463.5	505.5	641.4	597.4	619.7
	Change, %			*(5.5)*	*6.8*	*(8.6)*	*(4.4)*	*29.8*	*19.0*	*(6.2)*	*0.7*	*(2.9)*
	Propylene	-Naphtha	321.5	381.5	353.0	338.0	427.0	331.0	330.5	306.2	330.1	453.3
	Change, %			*(15.7)*	*(8.9)*	*(4.9)*	*(24.7)*	*(2.9)*	*(2.7)*	*5.0*	*(2.6)*	*(29.1)*
	Butadiene	-Naphtha	921.5	956.5	1,063.0	668.0	817.0	563.5	1,615.5	717.3	987.6	809.5
	Change, %			*(3.7)*	*(13.3)*	*37.9*	*12.8*	*63.5*	*(43.0)*	*28.5*	*(6.7)*	*13.8*
	Benzene	-Naphtha	149.0	181.5	190.5	225.5	347.0	348.5	338.0	247.2	345.3	257.6
	Change, %			*(17.9)*	*(21.8)*	*(33.9)*	*(57.1)*	*(57.2)*	*(55.9)*	*(39.7)*	*(56.9)*	*(42.2)*
	Toluene	-Naphtha	126.5	171.5	153.0	118.0	192.0	218.5	205.5	231.0	196.0	152.2
	Change, %			*(26.2)*	*(17.3)*	*7.2*	*(34.1)*	*(42.1)*	*(38.4)*	*(45.2)*	*(35.5)*	*(16.9)*
	Xylene	-Naphtha	141.5	201.5	188.0	155.5	204.5	198.5	190.5	228.2	175.3	165.5
	Change, %			*(29.8)*	*(24.7)*	*(9.0)*	*(30.8)*	*(28.7)*	*(25.7)*	*(38.0)*	*(19.3)*	*(14.5)*

자료 : Cischem, Platts, Bloomberg, SK증권
참고 : Spread는 Polymer와 Naphtha의 가격차이임

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Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	HDPE	CFR SE Asia	1,262.5	1,272.5	1,307.5	1,212.5	1,297.5	1,047.5	1,142.5	1,134.6	1,142.5	1,259.3
	Change, %			(0.8)	(3.4)	4.1	(2.7)	20.5	10.5	11.3	10.5	0.3
	MEG	CFR SE Asia	935.0	912.5	962.5	935.0	1,025.0	802.5	847.5	660.8	850.6	980.9
	Change, %			2.5	(2.9)	0.0	(8.8)	16.5	10.3	41.5	9.9	(4.7)
	PVC	CFR SE Asia	935.0	935.0	920.0	965.0	980.0	870.0	920.0	823.4	899.9	942.8
	Change, %			0.0	1.6	(3.1)	(4.6)	7.5	1.6	13.6	3.9	(0.8)
	PP	CFR SE Asia	1,282.5	1,292.5	1,277.5	1,227.5	1,307.5	1,037.5	1,032.5	978.4	1,099.6	1,261.7
	Change, %			(0.8)	0.4	4.5	(1.9)	23.6	24.2	31.1	16.6	1.7
	2-EH	CFR Korea	1,100.0	1,110.0	1,170.0	1,190.0	1,125.0	920.0	865.0	772.4	970.0	1,118.8
	Change, %			(0.9)	(6.0)	(7.6)	(2.2)	19.6	27.2	42.4	13.4	(1.7)
	ABS	CFR SE Asia	2,000.0	2,040.0	2,080.0	1,960.0	2,120.0	1,790.0	1,635.0	1,347.1	1,844.7	2,033.5
	Change, %			(2.0)	(3.8)	2.0	(5.7)	11.7	22.3	48.5	8.4	(1.6)
	SBR	CFR SE Asia	1,780.0	1,800.0	1,900.0	1,670.0	1,750.0	1,450.0	2,000.0	1,483.0	1,980.5	1,753.1
	Change, %			(1.1)	(6.3)	6.6	1.7	22.8	(11.0)	20.0	(10.1)	1.5
	SM	CFR SE Asia	1,362.5	1,375.0	1,510.0	1,320.0	1,452.5	1,152.5	1,205.0	1,064.6	1,253.8	1,401.7
	Change, %			(0.9)	(9.8)	3.2	(6.2)	18.2	13.1	28.0	8.7	(2.8)
	Caustic	FOB NEA	475.0	491.0	550.0	639.0	590.0	447.5	422.5	316.6	491.2	578.1
	Change, %			(3.3)	(13.6)	(25.7)	(19.5)	6.1	12.4	50.0	(3.3)	(17.8)
	PX	CFR SE Asia	980.0	940.0	982.5	935.0	957.5	775.0	855.0	790.4	844.4	964.2
	Change, %			4.3	(0.3)	4.8	2.3	26.5	14.6	24.0	16.1	1.6
	PO	CFR China	1,765.0	1,787.5	1,737.5	1,722.5	1,962.5	1,485.0	1,562.5	1,396.8	1,601.2	1,883.1
	Change, %			(1.3)	1.6	2.5	(10.1)	18.9	13.0	26.4	10.2	(6.3)
	Caprolactam	CFR SE Asia	2,130.0	2,130.0	2,105.0	2,200.0	2,130.0	1,610.0	1,850.0	1,344.9	1,936.4	2,119.4
	Change, %			0.0	1.2	(3.2)	0.0	32.3	15.1	58.4	10.0	0.5
	PTA	CFR SE Asia	860.0	845.0	857.5	772.5	790.0	630.0	642.5	613.7	667.8	801.9
	Change, %			1.8	0.3	11.3	8.9	36.5	33.9	40.1	28.8	7.2
Spread	HDPE		604.0	649.0	645.5	605.5	739.5	636.0	658.0	735.1	649.0	645.6
	Change, %			(6.9)	(6.4)	(0.2)	(18.3)	(5.0)	(8.2)	(17.8)	(6.9)	(6.4)
	MEG		276.5	289.0	300.5	328.0	467.0	391.0	363.0	261.3	357.1	367.1
	Change, %			(4.3)	(8.0)	(15.7)	(40.8)	(29.3)	(23.8)	5.8	(22.6)	(24.7)
	PVC		276.5	311.5	258.0	358.0	422.0	458.5	435.5	423.9	406.4	329.1
	Change, %			(11.2)	7.2	(22.8)	(34.5)	(39.7)	(36.5)	(34.8)	(32.0)	(16.0)
	PP		624.0	669.0	615.5	620.5	749.5	626.0	548.0	578.9	606.1	647.9
	Change, %			(6.7)	1.4	0.6	(16.7)	(0.3)	13.9	7.8	3.0	(3.7)
	2-EH		441.5	486.5	508.0	583.0	567.0	508.5	380.5	372.9	476.5	505.1
	Change, %			(9.2)	(13.1)	(24.3)	(22.1)	(13.2)	16.0	18.4	(7.3)	(12.6)
	ABS		1,341.5	1,416.5	1,418.0	1,353.0	1,562.0	1,378.5	1,150.5	947.6	1,351.2	1,419.7
	Change, %			(5.3)	(5.4)	(0.8)	(14.1)	(2.7)	16.6	41.6	(0.7)	(5.5)
	SBR	BD spread	200.0	220.0	175.0	395.0	375.0	475.0	(100.0)	366.2	499.4	329.8
	Change, %			(9.1)	14.3	(49.4)	(46.7)	(57.9)	(300.0)	(45.4)	(60.0)	(39.4)
	SM		704.0	751.5	848.0	713.0	894.5	741.0	720.5	665.1	760.3	788.0
	Change, %			(6.3)	(17.0)	(1.3)	(21.3)	(5.0)	(2.3)	5.8	(7.4)	(10.7)
	Caustic											
	Change, %											
	PX		321.5	316.5	320.5	328.0	399.5	363.5	370.5	390.9	351.0	350.5
	Change, %			1.6	0.3	(2.0)	(19.5)	(11.6)	(13.2)	(17.7)	(8.4)	(8.3)
	PO	propylene sprea	785.0	782.5	722.5	777.5	977.5	742.5	747.5	691.1	777.6	816.1
	Change, %			0.3	8.7	1.0	(19.7)	5.7	5.0	13.6	0.9	(3.8)
	Caprolactam	benzene spreac	1,322.5	1,325.0	1,252.5	1,367.5	1,225.0	850.0	1,027.5	698.2	1,097.6	1,248.1
	Change, %			(0.2)	5.6	(3.3)	8.0	55.6	28.7	89.4	20.5	6.0
	PTA	px spread	174.0	187.0	169.8	118.0	119.8	87.5	44.0	60.4	76.7	127.0
	Change, %			(7.0)	2.5	47.5	45.3	98.9	295.5	188.0	126.9	37.0

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

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SK 증권

Global peers

	Currency	07/03	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
Petrochemical																
DowDuPont	USD	65.2	(0.9)	(1.7)	(1.5)	2.9	(10.8)	1.9	(8.5)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	98.5	(0.9)	(1.7)	(6.9)	(4.3)	3.3	16.6	6.4	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	81.3	(0.4)	0.7	(4.2)	(1.4)	(11.6)	(1.8)	(11.4)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	73.4	0.2	(0.9)	(3.4)	(4.6)	(0.1)	(5.3)	0.5	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	101.8	1.5	1.6	(2.8)	(3.8)	(0.7)	5.0	0.2	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	67.0	1.2	0.9	(2.0)	8.0	(0.9)	(0.8)	1.0	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	621	(0.3)	(0.5)	(5.3)	2.1	(23.3)	(3.9)	(23.3)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	920	0.4	(0.0)	(6.8)	(9.2)	(25.6)	(3.7)	(25.6)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	9,895	1.1	(0.1)	(9.3)	(9.1)	(13.6)	(2.4)	(13.6)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,397	(0.1)	(0.8)	(6.1)	(0.4)	(3.9)	13.8	(3.9)	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	1,840	(0.2)	(1.3)	(10.9)	(22.3)	(17.0)	(6.2)	(17.0)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	8,017	(1.1)	(2.6)	(7.9)	1.7	(19.9)	(13.7)	(19.9)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	123.4	(0.5)	(2.8)	(4.5)	7.5	21.6	19.9	21.7	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	74.2	(1.6)	1.0	(0.8)	5.0	25.5	35.2	25.8	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	113.0	0.4	2.7	3.2	10.8	14.7	21.6	14.5	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	124.0	0.4	5.1	7.8	15.3	19.8	28.9	20.4	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	88.0	0.8	3.0	3.4	8.2	12.5	16.6	13.0	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.50	(1.1)	(2.7)	(3.5)	(5.2)	(18.6)	(16.9)	(13.1)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	1.89	1.1	0.0	(9.1)	(6.4)	(31.0)	(43.4)	(29.2)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	971	1.1	(0.8)	4.4	8.0	6.2	40.7	6.8	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	111.1	0.1	5.3	7.4	2.9	15.0	18.3	14.5	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	74.3	4.2	(6.6)	(14.7)	(22.5)	(13.9)	8.0	(12.6)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.5	0.6	0.5	3.9	2.4	6.3	15.8	9.7	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	317,500	0.0	(8.9)	(5.8)	(16.1)	(22.5)	7.1	(21.6)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	328,000	(0.6)	(6.8)	(9.6)	(24.4)	(9.6)	(7.2)	(10.9)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	20,700	0.5	(8.6)	(19.9)	(29.8)	(37.1)	(32.4)	(34.5)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	115,500	1.3	(0.4)	8.5	17.5	12.1	49.4	16.1	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	41,600	(2.5)	(6.4)	6.8	9.5	(15.1)	23.8	(11.5)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	58,400	(2.3)	(4.1)	(12.2)	(3.2)	(8.8)	10.0	(7.4)	359	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
효성	KRW	6,030	(0.3)	(10.8)	(16.7)	(39.0)	(19.1)	0.0	(20.4)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			**0.1**	**(1.6)**	**(4.0)**	**(3.3)**	**(5.5)**	**6.5**	**(4.5)**							
Refinery																
Valero	USD	108.2	(1.0)	(1.9)	(12.6)	16.7	16.0	59.0	17.7	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	69.6	1.4	3.3	1.9	15.9	23.5	52.3	26.7	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemic	TWD	123.0	1.7	1.2	0.8	6.0	4.7	16.0	6.5	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	133.4	1.2	1.3	(10.9)	29.9	14.5	40.4	16.7	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	70.8	0.8	0.4	(13.5)	(2.5)	3.2	33.4	7.3	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	44.0	1.1	3.3	6.3	40.3	3.0	34.2	6.3	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	69.0	1.0	2.2	(15.4)	38.9	34.4	146.3	34.8	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	110.5	(0.1)	(0.3)	(7.1)	14.9	7.9	32.6	9.3	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	33.5	1.5	1.2	6.1	30.4	3.4	27.8	8.0	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	775.8	2.4	5.5	9.5	24.1	6.7	56.3	6.7	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	3,925.0	1.9	12.0	5.2	2.3	(13.3)	20.4	(13.3)	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	65.4	(0.9)	(1.2)	(6.0)	15.9	20.7	88.3	22.7	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	77.9	(0.4)	(0.1)	(0.3)	13.4	5.9	17.6	9.5	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	42.9	2.5	0.5	(5.6)	(2.5)	(3.6)	(11.8)	(3.1)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	184,500	(1.9)	(10.9)	(9.3)	(12.6)	(8.9)	14.6	(9.8)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	102,000	(0.5)	(11.3)	(5.6)	(15.0)	(10.1)	5.2	(12.8)	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	51,500	1.0	(7.4)	(10.9)	(18.8)	(16.0)	(26.1)	(17.2)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			**0.7**	**(0.1)**	**(4.0)**	**11.6**	**5.4**	**35.7**	**6.8**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임
* 국내업체의 multiple은 Dataguidepro 기준임

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Global peers

	Currency	07/03	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER 18E	PER 19E	PBR 18E	PBR 19E	EV/EBITDA 18E	EV/EBITDA 19E
E&P/Shale																
Exxon Mobil	USD	82	0.6	2.0	0.5	9.6	(5.1)	0.2	(1.7)	348,191	16.7	15.3	1.8	1.7	7.6	7.1
BP	GBP	581	1.4	3.2	0.8	21.3	10.9	28.8	11.2	153,259	14.3	13.5	1.5	1.4	5.4	5.3
Shell	EUR	2,611	0.5	1.4	(0.2)	16.9	3.9	26.0	5.3	291,180	12.3	11.2	1.4	1.4	5.9	5.7
Chevron	USD	125	0.4	0.5	0.7	8.6	(2.9)	17.3	(0.4)	238,354	15.7	15.0	1.6	1.5	6.4	6.1
Total	EUR	53	1.0	2.4	0.0	12.9	13.3	19.4	14.5	163,782	11.9	11.1	1.3	1.2	5.6	5.2
Sinopec	CNY	6	(0.6)	2.8	(10.4)	(1.7)	(3.1)	5.6	2.3	112,598	10.0	9.6	1.0	1.0	3.7	3.7
Petrochina	CNY	8	0.3	2.7	(5.9)	0.5	(8.9)	(2.7)	(6.9)	199,336	24.5	20.9	1.1	1.1	5.4	5.4
CNOOC	CNY	9	2.2	1.0	(9.1)	(17.4)	(10.9)	(14.3)	(10.1)	75,810	9.5	9.6	1.2	1.2	4.0	4.0
Gazprom	RUB	142	(1.0)	3.2	(1.0)	1.0	7.8	18.9	9.2	53,430	3.1	3.2	0.2	0.3	2.6	2.6
Rosneft	RUB	390	(1.2)	0.2	1.9	24.5	30.9	18.4	33.8	65,460	7.4	6.3	0.9	0.8	4.5	4.3
Anadarko	USD	73	1.4	0.5	3.4	24.1	34.1	59.3	37.0	37,838	25.4	21.6	3.7	3.2	7.0	6.2
Petrobras	BRL	18	0.2	9.1	8.3	(15.5)	4.8	41.6	8.7	62,932	6.7	5.9	0.7	0.6	4.3	4.0
Lukoil	USD	4,325	(1.2)	4.1	2.8	9.5	26.4	48.1	29.7	58,349	5.5	5.7	0.8	0.7	N/A	N/A
Kinder	USD	18	1.5	0.8	4.7	17.9	(6.7)	(9.4)	(2.1)	47,497	20.4	18.3	1.1	1.2	10.7	10.5
Equinor ASA	NOK	214	0.3	2.1	(0.7)	16.2	19.3	53.7	22.4	87,949	14.0	13.2	2.0	1.8	3.4	3.3
BHP	AUD	33	(1.6)	1.3	(0.1)	15.1	9.5	42.3	11.8	124,893	15.0	16.7	2.1	2.0	6.1	6.4
PTT E&P	THB	134	1.1	1.9	0.0	17.0	32.0	54.0	34.0	16,046	13.3	12.6	1.4	1.3	4.0	3.8
Petronas gas	MYR	17	1.3	0.6	(1.8)	(3.2)	(3.0)	(7.4)	(0.5)	8,518	18.2	18.0	2.6	2.5	10.0	9.9
Chesapeake	USD	5	1.9	5.0	16.6	80.8	29.7	3.1	33.3	4,814	6.4	7.3	#N/A N/A	6.9	6.6	6.3
Noble Energy	USD	35	2.0	(2.1)	(2.7)	16.3	11.8	19.9	19.0	16,800	30.2	22.4	1.5	1.5	7.6	6.4
Average		**0**	**0.5**	**2.1**	**0.4**	**12.7**	**9.7**	**21.1**	**12.5**							
PV																
WACKER	EUR	116.3	3.5	6.7	(18.6)	(13.3)	(30.2)	21.7	(28.3)	7,068	16.9	15.0	1.8	1.7	5.8	5.6
GCL-Poly	HKD	0.7	(4.1)	(7.8)	(18.4)	(28.3)	(51.7)	(14.5)	(49.3)	1,683	6.4	5.6	0.4	0.4	6.4	5.8
SunPower	USD	7.7	(4.3)	(1.0)	(8.8)	2.0	(12.8)	(18.1)	(8.7)	1,085	#N/A N/A	#N/A N/A	1.4	1.4	20.4	11.9
Canadian Solar	USD	12.2	(2.2)	0.4	(22.2)	(23.0)	(28.5)	(23.8)	(27.6)	715	8.1	8.2	0.7	0.7	7.6	8.3
JA Solar	USD	6.8	0.4	0.1	(5.3)	(2.2)	(8.5)	6.8	(9.1)	323	#N/A N/A	#N/A N/A	1.6	1.7	4.8	6.8
Yingli	USD	0.5	(35.7)	(70.8)	(73.1)	(72.7)	(74.0)	(80.0)	(73.4)	8	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
First Solar	USD	52.4	(1.3)	0.9	(20.6)	(24.9)	(25.0)	30.7	(22.5)	5,485	30.7	17.0	1.0	0.9	9.1	4.9
한화큐셀	USD	5.6	(10.7)	(8.9)	(20.3)	(23.8)	(23.4)	(21.9)	(20.2)	466	10.0	20.7	#N/A N/A	#N/A N/A	7.7	8.0
OCI	KRW	98,400	(0.8)	(8.0)	(24.9)	(38.5)	(31.9)	10.4	(27.6)	2,106	0.0	9.7	0.0	0.7	0.0	4.5
웅진에너지	KRW	3,390	0.0	(13.1)	(34.3)	(49.7)	(59.7)	(49.8)	(58.8)	90	N/A	0.0	0.7	0.0	4.5	0.0
신성솔라에너지	KRW	1,355	1.5	(11.4)	(21.7)	(19.3)	(30.2)	(35.9)	(29.2)	210	N/A	0.7	0.0	4.5	0.0	6.8
Average			**(4.9)**	**(10.3)**	**(24.4)**	**(26.7)**	**(34.2)**	**(15.8)**	**(32.2)**							
Gas Company																
Towngas China	HKD	7.7	1.2	(0.4)	3.8	11.3	23.0	51.0	22.6	2,718	15.0	13.3	1.3	1.2	12.5	11.4
Kulun	HKD	6.8	(0.9)	(0.4)	(6.7)	(0.3)	(17.8)	0.6	(16.3)	7,008	9.8	8.4	1.1	1.0	5.6	5.1
Beijing Enterprise	HKD	38.1	(0.3)	(1.8)	(11.6)	(9.6)	(19.2)	0.7	(17.9)	6,130	6.7	6.0	0.7	0.6	11.8	11.2
ENN Energy	HKD	80.6	4.4	1.2	2.0	10.0	42.8	72.5	44.5	11,142	18.0	15.1	3.6	3.1	10.5	9.2
China Resources Gas	HKD	33.9	(0.4)	3.8	16.5	23.8	22.9	27.7	19.4	9,597	17.8	16.0	3.0	2.6	9.8	8.9
China Gas Holdings	HKD	31.2	(1.1)	(0.2)	(7.3)	9.5	42.5	95.0	44.4	19,761	20.2	17.0	4.8	4.0	15.5	13.1
Shenzen Gas	HKD	15.2	(6.3)	(5.1)	(10.6)	(9.9)	(1.6)	6.3	2.3	4,092	9.3	8.0	1.2	1.1	5.8	5.1
Shann Xi	CNY	7.0	1.0	0.4	(18.2)	(2.4)	(19.2)	(21.0)	(17.4)	1,167	16.0	14.0	1.3	1.2	#N/A N/A	#N/A N/A
Suntien	HKD	2.2	(3.5)	(0.9)	(21.0)	0.0	3.3	49.3	5.3	1,032	5.7	5.0	0.7	0.7	8.2	7.1
China Oil & Gas	HKD	0.6	(1.6)	(6.3)	(4.8)	(4.8)	(22.1)	11.1	(29.4)	446	7.9	7.0	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**(0.8)**	**(1.0)**	**(5.8)**	**2.8**	**5.5**	**29.3**	**5.7**							
EV																
LG화학	KRW	317,500	0.0	(8.9)	(5.8)	(16.1)	(22.5)	7.1	(21.6)	20,112	11.9	10.8	1.3	1.2	5.6	5.0
삼성SDI	KRW	212,500	(0.7)	(5.1)	1.7	7.6	2.4	25.0	3.9	13,113	19.9	14.4	1.2	1.1	13.9	10.8
Panasonic	JPY	1461.0	(1.0)	(1.7)	(2.8)	(2.2)	(11.4)	(4.8)	(11.4)	32,428	13.3	11.7	1.8	1.7	4.9	4.5
GS Yuasa	JPY	499.0	(0.2)	1.6	(3.9)	(11.4)	(11.1)	2.0	(11.1)	1,867	14.4	13.3	1.1	1.1	6.7	6.3
NEC	JPY	2985.0	(0.7)	(2.8)	(1.6)	1.7	(1.8)	0.2	(1.8)	7,035	22.7	12.7	0.9	0.8	7.1	5.5
BYD Auto	CNY	45.4	(1.4)	(2.2)	(10.9)	(16.4)	(31.4)	(9.4)	(30.3)	17,845	26.6	19.9	2.1	2.0	12.1	10.4
Tesla Motors	USD	310.9	(7.2)	(9.1)	6.5	16.2	(2.0)	(11.8)	(0.2)	52,782	#N/A N/A	133.1	10.4	9.6	60.9	19.8
Kandi Technologies	USD	4.4	(1.1)	0.0	(19.4)	(9.4)	(37.9)	(2.2)	(36.0)	222	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A	#N/A N/A
Average			**(1.5)**	**(3.5)**	**(4.5)**	**(3.8)**	**(14.5)**	**0.8**	**(13.6)**							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임